State Policy and National Representation: Marijuana Politics in American Federalism

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Abstract: Members of Congress represent geographically demarcated districts embedded in subnational policy environments. Drawing on policy feedback literature and literature on congressional representation, I argue that, because of this institutional configuration, subnational policy adoption can affect national representation. More specifically, policy reforms in the states they represent can increase pressures members face from organized groups and individuals in their constituencies to promote aligned federal policies. Empirically, I examine the effects of state marijuana legalization. The inferential design leverages differences across the states in statewide citizen initiative institutions, which provides exogenous variation in legalization. Instrumental variables analysis indicates legalization influenced pro-marijuana bill sponsorship and roll calls in the 116th Congress. The evidence points to growing influence of industry in legalizing states—including the ability to mobilize employees and customers—as the key mechanism, thus underscoring the importance of a political economy perspective for studying interdependencies in American federalism.

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During his tenure in the Senate (2015-2021), Cory Gardner (R-CO) became a central figure in federal marijuana policy. In 2018, Gardner vowed to block judicial nominees in the Senate until he received a commitment that the federal government would not prosecute marijuana industry (Everett 2018). In the 116th Congress, Gardner sponsored core marijuana-related legislation including the SAFE Banking Act and the STATES Act.

Gardner was not always so pro-marijuana. He opposed Colorado's landmark 2012 ballot initiative legalizing marijuana for adult-use (Birkeland 2019), and there is little in his record prior to 2012 that would indicate he would become an important marijuana proponent. At a basic level, Gardner's pro-marijuana turn appears to be driven by a policy shift in the state he represented. The adoption of adult-use legalization in 2012 led to rapid marijuana industry growth in Colorado, which, as of 2018, took in the most industry revenue per capita of any state. The industry, according to journalistic accounts, has gained leverage in Colorado politics, compelling even conservative politicians like Gardner to support industry demands (Fertig 2020; Herndon 2018).

The case of Cory Gardner is inconsistent with existing perspectives in the literature on the relationship between policymaking at the state and federal levels. Much research suggests that state policies have little influence on the national policy agenda and policy decisions (Boeckelman 1992; Esterling 2009; Lowery, Gray, and Baumgartner 2011; Weissert and Scheller 2008). More recent scholarship finds state policies have just a minor effect on members of Congress, which recedes over the course of the legislative process (Karch and Rosenthal 2016). But the key proposed mechanism linking state policy to national lawmaking in this work is policy learning—that is, members learn about policy innovations adopted in the states they represent, and as a result are more likely to sponsor and vote for similar policies nationally. Cory

Gardner's transformation on marijuana policy clearly did not stem solely from learning about the effects of legalization. Rather, he was also responding to a political-economic shift in the state he represented that was wrought by a change in state policy. Marijuana legalization allowed for the growth of a new industry that, once developed, could sway Gardner's re-election bid (Fertig 2020).

This paper develops a new perspective on how state policy decisions can affect lawmaking in the U.S. Congress. While existing perspectives focus on policy learning, I argue that state policies can affect national representation also through separate mechanisms broadly associated with the policy feedback literature (Pierson 1993; Skocpol 1992) . Policies, "once enacted, restructures subsequent political processes" (Skocpol 1992, 58). State policies, I argue, can alter the political pressures faced by members of Congress, who represent geographically demarcated districts that are embedded in state policy landscapes. First, the policies states adopt structure their economies, and in so doing can affect the ability of organized economic interests to engage in politics and make demands on their representatives. Second, state policies can affect the mobilization and preferences of individual voters, and thereby shape the pressures faced by re-election seeking members. Finally, beyond potentially shaping preferences, state policy enactment might send a *signal* of constituent preferences that can be difficult for members of Congress to ignore. Put together, these mechanisms suggest the adoption of a policy at the state level can increase the pressure on members of Congress to promote aligned federal policies.

Empirically, I examine marijuana policy reform, a case that provides critical analytical leverage for testing the argument. The wave of state-level legalization over the past two decades has produced great variation in policy landscapes across the states. Unlike other policies studied in the literature on vertical policy diffusion, marijuana legalization, by allowing a new industry

to grow, has generated meaningful political-economic shifts in drug policy in the states where it was adopted. Moreover, the importance of the statewide citizen initiative—only available in 24 of the states—for passing legalization provides exogenous variation that allows for causal estimation of the effect of state policy shifts on representation in Congress.

Does marijuana legalization in the states they represent affect members' behavior in Congress? Studying the 116th Congress, I find evidence that it does. Using whether states permit citizen initiatives as an instrument, I find that members of Congress representing legalizing states were more likely to sponsor or co-sponsor key pro-marijuana pieces of legislation, and also more likely to cast certain pro-marijuana roll-call votes. Bringing quantitative evidence and elite interviews together to investigate mechanisms, I find the most support for the role of growing industry influence in legalizing states, but also find some support for the role of policy enactment signaling constituent preferences. I find little support for the notion that effects were driven by positive shifts to public favorability wrought by legalization.

This paper contributes, first, to the literature on bottom-up vertical diffusion in American federalism. As mentioned above, studies of bottom-up diffusion that focus on policy learning tend to find that state policy adoption has either small or non-existent effects on federal policymaking (Boeckelman 1992; Esterling 2009; Karch and Rosenthal 2016; Lowery, Gray, and Baumgartner 2011; Weissert and Scheller 2008). This paper suggests that certain state policies, in addition to potentially initiating a learning process, can also shift the interest group pressures faced by national policymakers. This dynamic might lead to the upward diffusion of state policies—but could also lead to the adoption of federal policies that align with or complement previously adopted state policies. These effects are most likely to manifest in policy areas like energy and labor in which both state and federal governments are active policymakers, and in

which state policy decisions have significant implications for state political economies and interest group landscapes.

This paper also has theoretical and methodological implications for the policy feedback literature. In its application of policy feedback theory to the study of policy interdependence and diffusion in American federalism, this study builds on recent scholarship illuminating how state policies can "feed into" the interest group politics in other states (Finger and Hartney 2019; Stokes 2020; Trachtman 2020). This study shows how similar dynamics can also shape policymaking in Congress, thus demonstrating how federalism structures policy and political change over time in American political institutions.

Methodologically, this study is, to my knowledge, the first to leverage a quantitative causal inference design to estimate the effect of prior policy decisions not just on voter behavior or interest group mobilization, but also on the actions of lawmakers in Congress. Establishing causation using quantitative designs in policy feedback research is notoriously difficult (Campbell 2012). The policy feedback studies that investigate lawmaking as an outcome tend to rely on broad historical institutional analysis of qualitative data (e.g. Patashnik 2008; Pierson 1994)—not micro-level, quantifiable examinations of lawmaker behavior. While, more recently, the policy feedback literature has taken a micro-level turn, research in this vein has focused on the effects of policies on *individual-level* behavioral outcomes like turnout and attitudes (see, Campbell 2012 for a review), not the behavior of lawmakers. As a result, we have accumulated much quantitative evidence on how policies affect voters, and to a lesser extent, interest groups, but little on how it matters for lawmaking and public policy decisions. By estimating the causal effect of policy decisions on lawmaking, this study has the potential to serve as a bridge between work in policy feedback and legislative studies.

The paper unfolds as follows. First, I review existing approaches to studying bottom-up vertical diffusion and develop the core theoretical framework linking state policy decisions to representation in Congress. I proceed to introduce the case, the politics of marijuana legalization, and the design for estimating the causal effect of state legalization on the behavior of members of Congress. I next present the main empirical results, discuss the evidence on the contributions of different mechanisms, and conclude.

State Policy and Lawmaking in the U.S. Congress

Existing perspectives on state-national policy diffusion

While there is much literature demonstrating dynamics of horizontal policy diffusion across the states (Haider-Markel 2001; Mintrom 1997; Walker 1969) and top-down vertical diffusion from the national level to the states (Baumgartner, Gray, and Lowery 2009; Karch 2006, 2012), less scholarship examines bottom-up vertical diffusion from the states to the national level.[1] Interestingly, much of this work suggests that state policy decisions have a limited or non-existent effect on policymaking at the national level (Boeckelman 1992; Esterling 2009; Lowery, Gray, and Baumgartner 2011; Weissert and Scheller 2008). Even Karch and Rosenthal (2016), whose study is the closest in empirical approach to this one, find that state policy decisions in the area of electronic commerce have only minor effects on national representation in Congress that diminish over the legislative process. The core mechanism explored in these studies is one of learning, which builds on the classic notion of states as "laboratories of democracy" (Brandeis 1932). For instance, Karch and Rosenthal "treat developments in the states as an 'opportunity to learn' for members of Congress (pg. 2)", with the assumption being that members are more likely to learn from policies adopted in the states they represent than those adopted elsewhere.

[1] Other studies explore bottom-up diffusion from cities to states (e.g. Shipan and Volden 2006).

The literature on the "California effect" provides another theoretical framework for considering bottom-up pressures in American federalism (Vogel 1995). This perspective, instead of focusing on policymaker learning, examines how state regulatory policies can shift the preferences of regulated firms for national policy. In particular, new state policies might lead firms operating in multiple states to advocate for national policies that replace state patchworks with consistent national standards, and potentially pre-empt further state regulation (Elliott, Ackerman, and Millian 1985). State policies can also compel firms to absorb costs or shift their investment strategies in ways that reduce the potential new costs (or enhance the benefits) of similar federal regulations (Meckling and Trachtman 2021). In this way, the advocacy of regulated firms can lead to the upward diffusion of state policies.

State-national vertical policy feedback

The theoretical framework proposed in this paper, like literature on the "California effect", is attentive to how state policy adoption—beyond providing policymakers with the opportunity to learn—can also fundamentally reshape the political terrain in ways that shift the pressures that policymakers face. But, by drawing on the policy feedback literature (Pierson 1993; Skocpol 1992), I identify a broader set of mechanisms than that explored in existing work, and also focus particularly on how these mechanisms affect the behavior of members of Congress.

In this paper, I am concerned primarily with how these dynamics affect lawmaking in Congress. Members generally represent the preferences of the citizens (Canes-Wrone, Brady, and Cogan 2002) and organized groups (Hall and Wayman 1990) that make up their constituencies. While individual- and group-level inputs are often taken as exogenous, these factors are also shaped by previously established policy—including policy adopted at the state level. In this section, I propose three mechanisms by which state policy decisions might

influence lawmaking in Congress: a political economy mechanism, a behavioral mechanism, and a public opinion signaling mechanism.

In terms of political economy, state policy decisions can influence what sorts of economic activities are profitable, and as a result, which types of firms establish and grow—as well as which fail. The same is true of another set of powerful organized economic interests: labor unions. The ability of unions to develop and maintain organizational strength is heavily influenced by state policies like collective bargaining rules and "right-to-work" laws (Anzia and Moe 2016). The organized interests that develop and grow their economic presence will also have greater political heft (and the opposite for interests that are economically weakened)—and will therefore be in a stronger position to influence national politics. This policy feedback dynamic can generate political pressure for members of Congress to support policies that align with those that have previously been adopted in the states they represent. The groups that benefit from, and are strengthened by, state-level policy decisions are likely to also benefit from the adoption of aligned policies at the national level—so might leverage their newfound strength to push for those policies.

Members of Congress generally care about their re-election (Mayhew 1974), and firms and unions have demonstrated an ability to transform their economic presence into political power by engaging in elections. Firms mobilizing employees to support their political interests is widespread in contemporary American politics (Hertel-Fernandez 2016). Similarly, mobilizing members in elections is a key source of union political strength (T. Moe 2011). Journalistic accounts have highlighted the importance of mobilizing employees (and customers) in the growing political sway of the marijuana industry, especially in states that have adopted adult-use (versus just medical-use) legalization (Herndon 2018).

State policies that affect the growth or decline of industry in a state can also affect representation in Congress due to the logic of structural power (Lindblom 1977). Because their re-election prospects depend in part on economic performance (Healy and Malhotra 2013), members of Congress have an incentive to support policies that benefit business interests central to economies in the places they represent—even in the absence of active corporate political mobilization. Governors also, for the same reason, might use their sway with members of Congress to advocate for federal laws that align with state policies and programs (Karch and Rose 2019). While marijuana industry's economic contribution remains small relative to major industries like healthcare and energy, it is highly labor intensive and, in many states, growing rapidly (Yakowicz 2021). Moreover, high taxes on marijuana are often used to fund state programs in areas like education and criminal justice, and also to bolster general fund revenues (How do marijuana taxes work? 2020). The importance of industry tax revenue for budgets and programs in the states they represent thus gives members of Congress representing legalizing states another reason to support pro-marijuana federal laws.

In addition to conferring structural power and the ability to mobilize employees or members, state policies that benefit particular organized interests also might provide those interests with a greater capacity to deploy financial resources: lobbying and campaign contributions. Though money is generally ineffective at buying roll-call votes in Congress, research suggests it can shape how members allocate their time and attention. Hall and Wayman's (1990) seminal study, for instance, found that, while PAC contributions from organized interests had no effect on roll call voting, contributions did affect the time that members spent working on issues promoted by contributors—a result that has been corroborated experimentally (Kalla and Broockman 2016). Of course, firms and unions can also contribute to the campaigns of members representing

districts where they do not have an economic presence. In the marijuana case, as I will show, the industry has mostly targeted members representing legalizing states, but also contributed to campaigns elsewhere. The focus on members representing legalizing states may reflect a strategy of seeking to increase the time and attention that members already inclined to support marijuana reform—perhaps because of other mechanisms associated with industry growth in their districts—spend on the issue.

The discussion above focuses on political economy and organized interests, but public policies also affect individual-level mobilization and attitudes (Campbell 2012). Citizens living in states that adopt reforms, after experiencing them "on the ground", may become more comfortable with their national adoption. In cases like marijuana where new policies establish new markets and products, consumers can also be a powerful coalition—especially when organized by the firms that sell to them (Culpepper and Thelen 2020).

In considering member responsiveness to shifts in individual-level political behavior, there is ample evidence that members' roll call votes are correlated with the preferences of constituents in their districts (Bartels 1991), and that policy is broadly dynamically responsive to shifts in public attitudes (Erikson, Mackuen, and Stimson 2002). At the same time, more recent findings suggest that member responsiveness might be decreasing. As the major parties have polarized, a greater share of variation in member behavior is explained by partisanship, so a competitive district might be represented very differently depending on the outcome of a close election (Bafumi and Herron 2010). More broadly, studies show that even if member behavior is correlated with voter preferences, there remains a large overall gap between public preferences and public policy (Lax and Phillips 2012).

One reason is that politicians misperceive the preferences of their constituents. Comparing surveys of state legislators to Cooperative Congressional Election Study data, Broockman and Skovron (2018) find that lawmakers consistently believe the preferences of their constituents are more conservative than they actually are. These biases likely extend to the U.S. Congress. Conducting surveys of senior congressional staffers, Hertel-Fernandez, Mildenberger, and Stokes (2019) find that staffers have skewed perceptions of public attitudes driven, they argue, by a reliance on conservative and business interests for policy information.

This brings us to a final potential mechanism: state policy as *signal* of constituent preferences. When states adopt particular policies, it provides information to members of Congress representing those states about the preferences of their constituents. This is especially true in cases where state policy is enacted via initiative, which has been a crucial element of liberalizing state marijuana laws. In addition to providing information, these votes can provide political ammunition, giving election opponents the chance to highlight cases where members of Congress are "out-of-step" with their constituents' *expressed* preferences. This mechanism is closer than the others to the learning mechanism studied in existing literature on vertical policy diffusion (e.g. Karch and Rosenthal 2016). But unlike existing accounts, this is not about lawmakers learning about how a policy performs—rather, it is about lawmakers learning about the preferences of constituents.

To summarize, whereas existing literature on bottom-up vertical diffusion in American federalism focuses on policy learning, I have outlined a separate set of mechanisms by which state policy might affect national policymaking—particularly in Congress. Each of these mechanisms—political-economic and interest group shifts, shifts in individual-level mobilization, and new signals of constituent preferences—are likely to produce positive

feedback from state policy to congressional representation. I would therefore expect members, on average, to respond to the adoption of policies in the states they represent by supporting aligned policies at the federal level.

Investigating these dynamics empirically presents two difficult challenges. First, state policy is non-random, so confounding variables might make it difficult to estimate the effect of state policy on national representation. Second, it is difficult to disentangle the different mechanisms of policy feedback and learning that could mediate a positive relationship between state policy decisions and representation in Congress. As I discuss below, the empirical context for this study, marijuana legalization, has qualities that facilitate causal identification of the effect of state policy on national representation. This case also presents opportunities, as I will discuss, for parsing potential mechanisms, though a precise decomposition is not possible.

State Marijuana Legalization and Representative Behavior

Marijuana politics has several features that make it particularly suitable for investigating the causal effect of state policy on representation in Congress. First, as I discuss below, the key role of the ballot initiative in state legalization of marijuana provides exogenous variation in likelihood of legalization that can be leveraged for causal inference. Second, legalization has produced clear, sizable, and fast changes to states' policy and interest group landscapes: between 2010 and 2020 industry revenue increased by nearly tenfold (Medical & Recreational Marijuana 2019). This distinguishes the case of marijuana policy from other policy areas that have been studied in the literature on bottom-up vertical diffusion, which are often technical in nature and without highly visible political-economic effects (e.g. Karch and Rosenthal 2016).

Beyond being a suitable empirical case to examine policy feedback dynamics in Congress, the politics of marijuana is important to understand because of the policy implications. Marijuana

prohibition has direct and sizable consequences for people's lives. In 2018, with marijuana already having been legalized for adult-use in 10 states, 40 percent of total drug arrests in the U.S. were for marijuana-related offenses—with a full 92 percent of those arrests just for possession (Gramlich 2020). Convictions for marijuana possession can produce life-altering costs, affecting eligibility for public housing and student financial aid, employment opportunities, child custody determinations, and immigration status among other things (The War on Marijuana in Black and White 2013). For these and other reasons, many advocates see marijuana policy as a crucial piece of broader criminal justice reform (Altieri 2020).

Marijuana policy also has important economic implications. As legalization has advanced, industry revenue has grown steadily from a total of $3.5 billion in legal sales in 2014 to over $13.5 billion in legal sales in 2019 (U.S. Legal Cannabis Market Growth 2019) and marijuana industry is now one of the fastest areas of job growth in the U.S. (Murphy 2019).

Marijuana Politics and Policy in the U.S.

Marijuana was first effectively prohibited in the U.S. under federal law by the Marihuana Tax Act of 1937.[2] The drug's illegality was made official under the Controlled Substances Act of 1970, which, in classifying marijuana as a Schedule 1 drug, prohibited all uses.

Though marijuana remains a Schedule 1 drug at the federal level, in the past 25 years state actions have spearheaded a steady liberalization of marijuana policy. California's Proposition 215 of 1996, which permitted the use of marijuana for medical purposes, initiated a wave of state medical marijuana laws. By the end of 2020, the use of marijuana for medical purposes was legal in 33 states, with another 14 states permitting marijuana with limited THC content for medical

[2] Rather than outright prohibition, the Marijuana Tax Act imposed steep excise taxes on all marijuana sales, deterring production and consumption (in that era the authority to regulate medicines was reserved for the states).

use. More recent years have seen the expansion of adult-use marijuana legalization at the state level; between 2012 and the end of 2020, 15 states legalized marijuana for adult use.

The state-level liberalization of marijuana laws has been driven by a combination of increasing public favorability and well-funded advocacy organizations working across the country. Support for marijuana legalization increased from 31 percent of the public in 2000 to 68 percent in 2020 (Brenan 2020). Advocates have taken advantage of favorable public opinion by relying heavily on citizen initiatives, and organizations like Marijuana Policy Project (MPP) have developed expertise in running initiative campaigns.

Even as the legal landscape of marijuana has shifted dramatically at the state level, federal law has remained largely stagnant. Lack of progress at the federal level has led to growing conflict between state and federal laws, leaving the burgeoning industry in a highly fragmented legal environment. Most notable is uncertainty over enforcement of federal laws prohibiting marijuana (Higdon 2019). But in addition, federal prohibition limits industry access to banking and other financial services and limits small businesses' access to tax deductions.

Warming public attitudes, industry growth, and growing costs from state-federal policy conflicts have produced momentum for reform in Congress. Several pro-marijuana bills were introduced in the 115th Congress, but Republican majorities kept them from being brought to floor votes. With various forms of legalization continuing to spread across the states, and Democrats taking control of the House in 2018 elections, advocates and industry interests saw the 116th Congress as a crucial opportunity to advance reform at the federal level. As one journalist wrote: "This is the first Congress in history where, going into it, it seems that broad marijuana reforms are actually achievable" (Higdon 2019).

Efforts from advocates and industry coalesced around three broad goals—each with a related proposed bill—in the 116th Congress. First, and narrowest in scope of the three, was providing the marijuana industry with greater access to banking services. The proposed SAFE Banking Act would "create protections for depository institutions that provide financial services to cannabis-related legitimate businesses and service providers for such businesses" (Perlmutter 2019). The second major goal was broadly protecting industry and consumers in states that have legalized marijuana from federal interference or prosecution. The STATES Act would exempt individuals and corporations operating legally according to state law from federal enforcement. The third and broadest goal was amending the Controlled Substances Act to end federal prohibition on marijuana. The MORE Act would both end federal prohibition as well as expunge prior convictions. Notably, support for the MORE Act comes to a greater extent from advocates than from industry interests, which have focused on narrower bills.[3]

Instrumental Variables Design

Even using state policy variation for leverage, causally estimating the feedback effects of prior policies on the actions of lawmakers poses inferential problems. Since policy adoption is nonrandom, any observed relationship between subnational policy and member behavior might be driven simply by a correlation in the preferences of subnational policymakers and members of Congress—not by the theoretical mechanisms discussed above. In this case, the types of states that legalize marijuana are also likely to be the types of states that elect representatives that are more progressive on marijuana policy, making it difficult to estimate the effect of legalization on representation in Congress.

[3] Interview with senior policy advocate at National Organization for the Reform of Marijuana Laws (NORML), 5/13/2020.

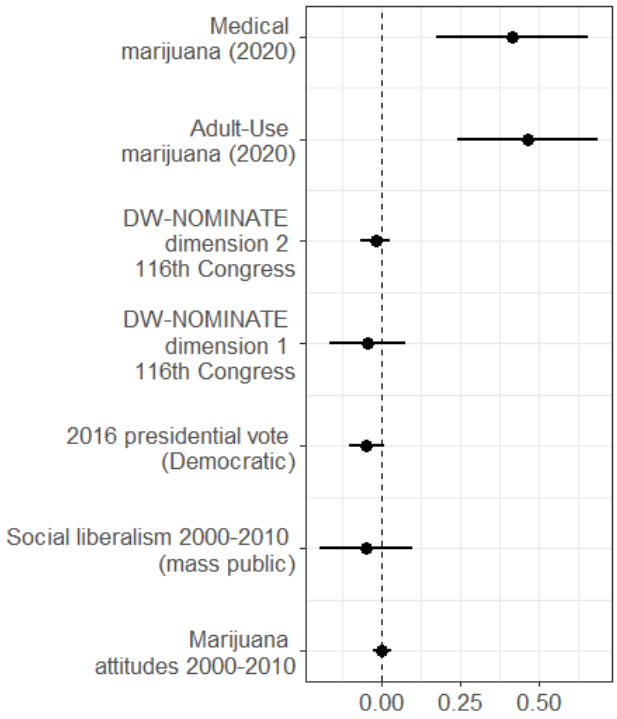
This paper relies primarily on an instrumental variables (IV) design for causal inference. The IV design draws specifically on the fact that citizen initiatives have been a fundamental tool for legalization advocates. The first 8 states to legalize marijuana for adult-use did so via citizen initiative. For pro-marijuana organizations, whether states allowed initiatives has been a major factor in determining where to allocate time and resources. The importance of the initiative, according to one advocate, stems from the fact that the public generally holds more liberal views on marijuana than representatives in state legislatures.[4] As of the end of 2020, whether a state allowed citizen initiatives was highly correlated with whether it permitted marijuana for adult use (ρ = .51) and whether it allowed medical marijuana (ρ = .44)—the first requirement for a valid instrument.

To serve as a valid instrument, initiative status (whether they are allowed to enact statutes or constitutional amendments) must also, conditional on observables, only be associated with member behavior through the mechanism of legalization (the "exclusion restriction"). There is good reason to think this is the case. Initiative processes were generally put into place around the turn of the 20th century in response to pressure from elements of the Progressive movement—long before marijuana policy was a salient issue. (Appendix A.1 provides each state's initiative rules.) If initiative status were related to congressional representation on marijuana issues through mechanisms other than legalization, then we would expect these rules to also be related with factors generally associated with the behavior of members of Congress. But, as indicated by Figure 1, whether a state allows citizen initiatives is unrelated to the factors political scientists generally believe to drive congressional behavior. First, initiative status is uncorrelated with measures of congressional ideology in the 116th Congress. In addition, it is slightly *negatively*

[4] Interview with senior official at Marijuana Policy Project (MPP), 4/17/2019.

correlated with 2016 Democratic presidential vote share, which should bias results downwards to the degree it is not accounted for in analysis. Finally, it is neither correlated with state-level measures of attitudes towards marijuana legalization nor state-level measures of social liberalism in the mass public from 2000 to 2010 (Caughey and Warshaw 2016, 2018).[5]

Figure 1: Whether states allow citizen initiatives is correlated with marijuana legalization and uncorrelated with factors generally associated with congressional behavior. Points represent bivariate association between whether a state allows citizen initiatives and each outcome. Outcome are standardized to a 0-1 scale. 95 percent confidence intervals are calculated using standard errors clustered at the state level.



The Effect of State Marijuana Legalization on Bill Sponsorship and Roll Calls

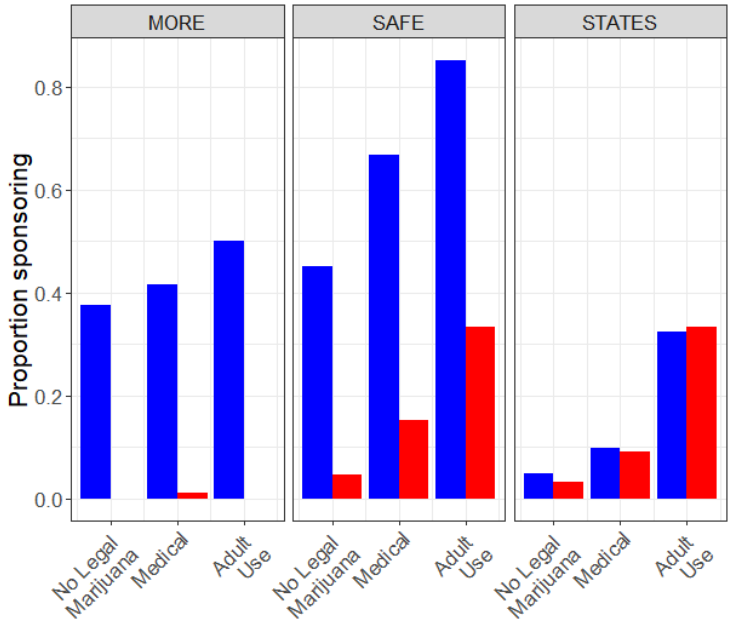
I now turn to examining the effects of legalization on bill sponsorship and roll calls in the 116th Congress,[6] starting with bill sponsorship since there is more data (many more bills have

[5] Measures are derived from aggregating policy questions across polls using a group-level item-response model.

[6] This was the first since the initiation of the state-level adult-use legalization wave in 2012 in which advocates and industry interests perceived an opportunity for significant legislative progress.

been introduced than have been voted on). I focus on the three bills discussed above at the core of the industry and advocacy groups' agenda: the SAFE Banking act; the STATES Act; and the MORE Act. Figure 2 demonstrates that members of Congress representing states with more liberal marijuana laws were descriptively more likely to sponsor liberal marijuana legislation, but this association does not provide evidence of a causal effect.

Figure 2: Bill sponsorship by state legalization status. Bars represent proportion of members sponsoring or co-sponsoring each bill. Blue bars are Democrats, and red bars are Republicans.



Analysis using citizen initiative rules as an instrument, though, as discussed above, can provide causal leverage. The key treatment is a measure of state marijuana legalization status at the end of the 116th Congress.[7] In the main analysis, I code the treatment variable as 0 for states with neither medical nor adult-use, 1 for states with medical marijuana, and 2 for states with adult-use legalization.[8] Treatment is instrumented by whether a state allows citizen initiatives as

[7] Status at the end of the Congress is used since a shift in legalization occurring in the middle of the Congress could plausibly affect member behavior for the remainder.
[8] Since citizen initiatives predict both medical and adult-use legalization, the IV analysis cannot parse their separate effects. In addition, there remains significant policy variation within the categories of medical-use and adult-use. For instance, states vary on the availability of licenses

discussed above. For outcomes, first, I record binary measures of whether members sponsored or co-sponsored each of the SAFE Banking Act, STATES Act, and MORE Act. I also estimate a broader marijuana *bill sponsorship score* by computing the proportion of the 14 priority pieces of legislation promoted by the industry group National Cannabis Industry Association (NCIA) sponsored or co-sponsored by each member. (The distribution of the *bill sponsorship score* by party and legalization status is provided in the Appendix A.1.)

Two-stage least squares regression is used to estimate the effect of liberalization of state-level marijuana law on these outcomes. The first stage predicts adult-use marijuana legalization from the ballot initiatives variable. First stage results presented in the appendix (A.2) demonstrate that citizen initiative rules are a strong instrument for legalization. The second stage estimates the relationship between predicted legalization and bill sponsorship.[9] I estimate models both with and without state- and member-level covariates: party-identification (PID), ideology (DW-NOMINATE); and state-level covariates: 2016 Democratic presidential vote share; and social liberalism of the mass public.

Estimates are presented in Figure 3. For the SAFE Banking Act and the STATES Act, I estimate that state-level marijuana legalization increased the likelihood that members (representing those states) sponsored liberal marijuana bills. The non-covariate adjusted coefficient of .24 for the SAFE Banking Act, for instance, indicates a 1-point shift in legalization status (from prohibition to medical, or medical to adult-use) is associated with an increase of 24 percentage points (SD = .50) in likelihood that members sponsored the Act. I estimate effects of similar magnitude for the STATES Act. I do not estimate a statistically significant effect for the

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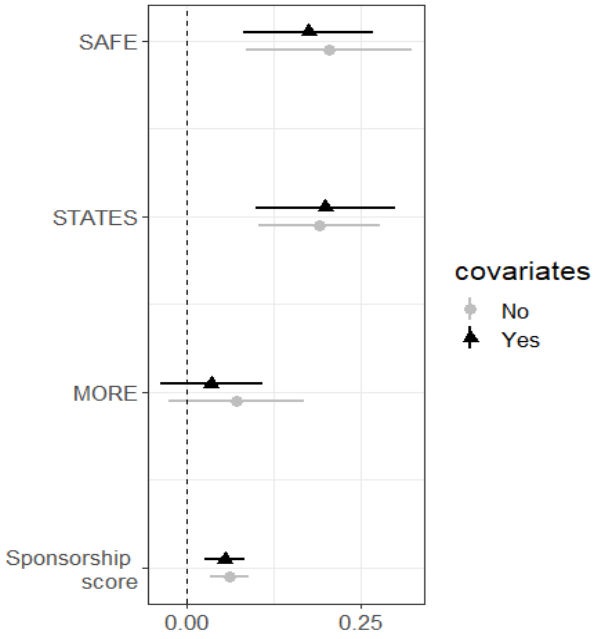
for cultivation and distribution. Measurement error in the treatment should attenuate estimates, making it more difficult to detect effects. Results are robust to coding only adult-use states as "treated" (see appendix, A.2).

[9] Analysis uses the *ivreg* function in the *AER* package in R.

MORE Act, which may be driven by the fact that sponsorship of this bill was more partisan than the others (see Figure 2). Turning to members' broader *bill sponsorship scores*, I find evidence of a causal relationship. The coefficient of .06 suggests that a 1-point shift in legalization status is associated with an increase of .06 (SD = .11), which corresponds to .84 additional NCIA-supported bills sponsored on average.

Figure 3: Effects of state marijuana legalization on bill sponsorship in the 116th Congress. Estimates are derived from two-stage least squares regression. State legalization status is instrumented by citizen initiatives rules. 95 percent confidence intervals are calculated using standard errors clustered at the state-level.



Of course, the validity of these results depends on the exclusion restriction. One concern is that ballot initiative processes are somewhat more common in the western part of the country, an area that is also potentially ideologically more pro-marijuana. But, as I demonstrate in the appendix (A.2), results are generally consistent (though with reduced precision) when excluding western states from the analysis.

That said, there remains the concern that there is some unobservable underlying difference between initiative and non-initiative states driving the findings. But if the association between

ballot initiative rules and marijuana bill sponsorship were driven by mechanisms unrelated to state-level legalization, we would expect an association between initiative rules and congressional behavior on marijuana *prior* to the current era of legalization. Here, I present a falsification test demonstrating that this is not the case. Specifically, I investigate which members sponsored a series of bills introduced in the 1980's that would have rescheduled marijuana to Schedule II, thereby allowing doctors to prescribe the drug to patients in need (subsequently referred to as "rescheduling bills"). The first in the series of rescheduling bills, HR 4498, was introduced in the 97th Congress (in 1981) and co-sponsored by a bipartisan group of 84 members. Similar pieces of legislation were introduced in the 98th and 99th Congresses (HR 2292 and HR 2232 respectively).

Figure 4: Reduced form relationship between citizen initiatives and bill sponsorship pre- and post-legalization wave. Left panel presents reduced-form relationship between citizen initiatives and sponsorship of rescheduling bills prior to legalization wave. Right panel presents reduced-form relationship for the 116th Congress. 95 percent confidence intervals calculated using standard errors clustered at the state-level.

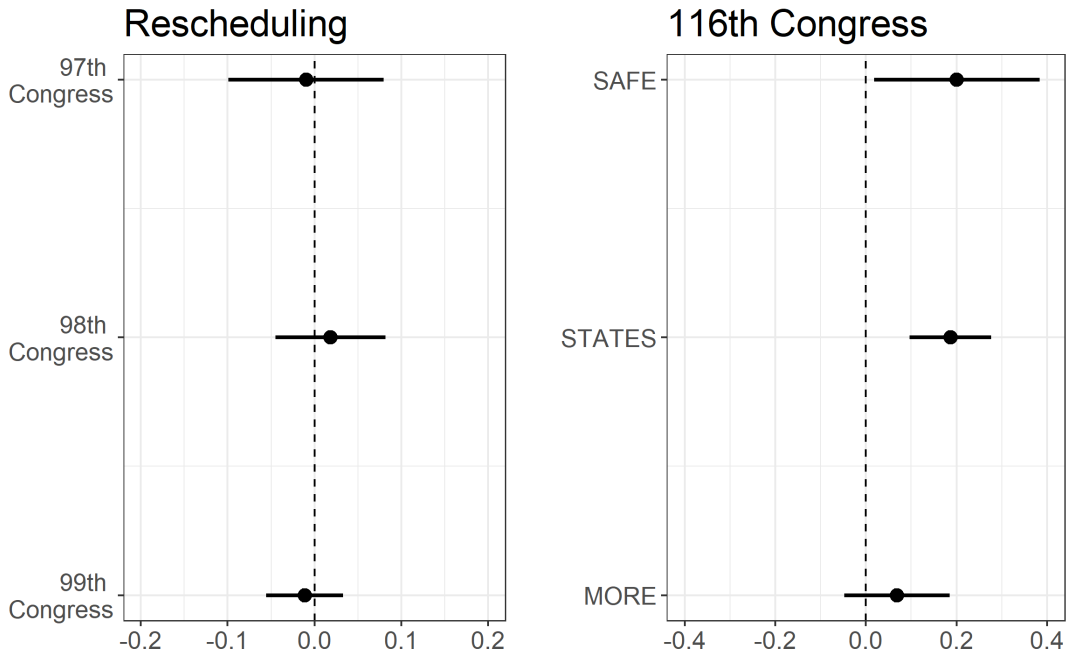


Figure 4 demonstrates no correlation between initiative rules and bill sponsorship in the 97th through 99th Congresses. On the other hand, the right panel of Figure 4 presents a positive reduced-form relationship between initiative rules and sponsorship of the SAFE Banking Act and the STATES Act in the 116th Congress. This test therefore provides support for the exclusion restriction assumption necessary for a causal interpretation of the IV analysis.[10]

I now turn to an investigation of the effect of the liberalization of state marijuana laws on members' roll-call votes on marijuana issues. This analysis is necessarily more restricted than the analysis of bill sponsorship since few roll calls have been taken. In June 2019 and July 2020, the House passed amendments (267-165 and 254-163 respectively) that would prevent the Department of Justice (DOJ) from using funds to prosecute marijuana offenses in jurisdictions where it is legal;[11] in September 2019 the House passed the SAFE Banking Act 321-103; and in December 2020 the House passed the MORE Act 228-164.[12]

The IV analysis of roll calls has a similar structure as the bill sponsorship analysis, except the main outcome is a binary indicator for whether members supported the legislation (versus sponsored). Results, presented in Figure 5, indicate that legalization did affect whether members voted for budget amendments to restrict the DOJ. The covariate-adjusted coefficient estimates of .09 for the 2020 version and .07 in 2019 indicate that a 1-point shift in legalization status (from prohibition to medical, or medical to adult-use) is associated with an increase of 7 and 9

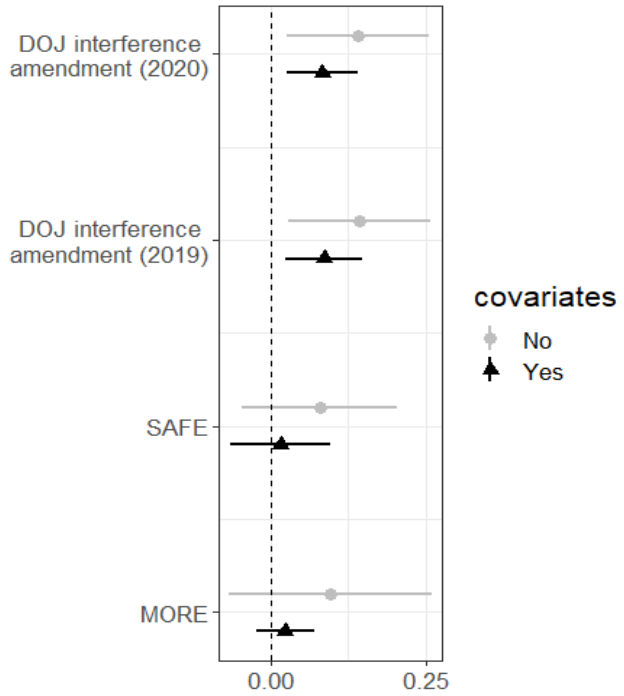
[10] As an additional check, I also conduct the main analyses using regression adjustment for identification versus the instrumental variables method. This approach does not rely on the exclusion restriction assumption, but instead assumes that congressional members representing legalizing and non-legalizing states are otherwise comparable conditional on measures of ideology, party identification, state-level Democratic vote share in the 2016 Presidential election, and estimated state-level ideology. As shown in the appendix (A.2), this approach yields similar estimates as the instrumental variables approach.

[11] Since these amendments are part of the federal budget, they must be renewed every year.

[12] The Senate has not voted on any of these bills.

percentage points, respectively, in likelihood of votes in favor. Interestingly, though results presented above indicate that legalization affected whether members *sponsored* the SAFE Banking Act, I do not find that legalization had a statistically significant effect on roll call voting for this bill. I also estimate a null result for the MORE Act, which was for the most part a party-line vote (only 6 Democrats voted against, and only 5 Republicans in favor).[13]

Figure 5: IV estimates of the effect of state marijuana legalization on roll calls in 116th Congress. Estimates are derived from two-stage least squares regression. State legalization status is instrumented by citizen initiatives rules. 95 percent confidence intervals are calculated using standard errors clustered at the state-level.



Overall, the evidence on roll-call voting is mixed. That said, the stronger estimated effects of state legalization on bill sponsorship compared to roll-call voting is consistent with the mechanism of industry influence: interest groups are generally more adept at shaping members' attention than their highly visible roll-call votes (Hall and Wayman 1990). Indeed, statistically

[13] Results are robust to a specification that uses covariate-adjustment for inference instead of the IV design—see the appendix (A.2).

significant findings on roll calls were observed only for the DOJ amendments, which were somewhat lower-profile votes.

Investigating Mechanisms

The prior section presents evidence that members of Congress representing states that previously legalized marijuana were more likely to sponsor and vote for pro-marijuana bills. In the paper's theory development, I suggested three new mechanisms: a political-economic one focused on marijuana industry growth, a behavioral one focused on public opinion shifts, and a signaling one whereby state legalization signals public favorability. There is also the policy learning mechanism which has been the focus of existing literature on bottom-up vertical diffusion.

While providing a precise decomposition of these mechanisms is not possible with the available data, in this section I bring together quantitative and qualitative evidence to provide some insight as to how these mechanisms have contributed to the overall effect observed. As part of gathering qualitative data, I conducted 9 semi-structured elite interviews with the following individuals working in marijuana politics and policy.

- Senior official at the National Organization for the Reform of Marijuana Laws
- Senior official and state-level staffer at the Marijuana Policy Project (MPP).
- Former state legislator in Colorado closely involved with legalization effort and development of marijuana industry.
- Senior official at the Cannabis Voter Project.
- Director-level employee of large cannabis firm with over 10 years of experience in the industry.
- Member of Congress representing a state with adult-use legalization.

- Two journalists covering marijuana politics and policy in Colorado.

While interviews were not meant to provide an exhaustive portrait of the mechanisms at play, they provide an important complement to the quantitative evidence I will bring to bear.

I first consider policy learning, due to its prominent role in existing literature. The logic of policy learning is that members of Congress representing legalizing states, after learning about the positive effects of legalization, will leverage their positions in national politics to seek to spread the policy across the country through federal legislation. Yet, close inspection of Figure 3 indicates results that are somewhat inconsistent with this mechanism. I observe that state marijuana legalization has a stronger effect on support for the SAFE Banking Act and STATES Act than for the MORE Act. The SAFE Banking Act and the STATES Act were designed to protect and facilitate the development of marijuana industry in states that adopt legalization—whereas the MORE Act, if enacted, would diffuse adult-use legalization nationwide. Similarly, inspecting Figure 5, state legalization had a stronger effect on roll-call votes on DOJ interference (which only would affect legalizing states) than on roll-call votes for the MORE Act. If learning were the core mechanism, I would expect state legalization to have stronger effects on support for policies that would legalize marijuana nationally than for policies that would facilitate industry growth in legalizing states. Of course, I cannot rule out learning entirely as a mechanism, and it is likely that policy learning contributed somewhat to the observed relationship between state legalization and the actions of members of Congress. But the fact that state policy decisions affected member behavior *on different, but aligned, national policies* suggests learning is likely not the dominant mechanism.

I turn next to the political-economic mechanism. Namely, to what extent were effects driven by growing industry influence in legalizing states? In evaluating this mechanism, it is worth

considering, first, the extent to which legalization has actually affected organized economic interests. The answer is: quite a lot, especially in states adopting adult-use legalization. According to NCIA, as of 2018 the average state with medical marijuana featured sales of $21 per capita (an average of 100 million dollars in total revenue), while the average state with adult-use legalization featured sales of $130 per capita (an average of over a billion dollars in revenue).[14]

Revenue growth in legalizing states has increased the capacity of industry interests to engage politically at the national level. To examine exercise of instrumental power, I draw on lobbying and campaign contributions data collected by the Center for Responsive Politics. The data reveal a sharp increase in lobbying from marijuana industry coinciding with recent state adoption of adult-use legalization. Annual federal lobbying from the marijuana industry has grown from just 45,000 dollars in 2012—the year that Colorado and Washington voters legalized marijuana for recreational use by ballot initiative—to nearly 6 million dollars in 2019 ("Marijuana Lobbying Profile" n.d.). Campaign contributions data also suggest that legalization has affected the political presence of marijuana industry. Firms in the industry did not donate to congressional campaigns prior to the 2018 cycle. In the 2018 cycle, however, marijuana industry interests contributed in 19 percent of House races in states with adult-use marijuana, and just 2 percent of House races elsewhere. Discrepancies for the Senate were less stark, with contributions in 7 percent of races with adult-use marijuana, and 5 percent of races elsewhere. IV analysis again using citizen initiative rules to instrument for legalization suggests this relationship is causal (see appendix A.3).

[14] Public data for other years is not yet available.

In addition to leveraging its growing resources for lobbying and campaign contributions, the marijuana industry has leveraged its economic growth to engage politically by mobilizing consumers and employees. For instance, in Colorado, Governor Jared Polis collaborated with industry interests to turn out marijuana consumers and industry employees in his 2018 re-election. As part of this effort, the campaign matched the state's database of marijuana employees to the voter file to identify potential supporters, and then sent them targeted text messages and mailers (Frank 2018). The sway of marijuana industry and marijuana voters in Polis's 2018 bid was a major reason why former Senator Cory Gardner, who anticipated a tough re-election in 2020 (which he ultimately lost), made marijuana such a priority in the 116th Congress.[15]

I turn next to the public opinion mechanism. It could be the case that state legalization leads the broader public in legalizing states to be more liberal on marijuana, which then drives members of Congress to support marijuana reform. To investigate the association between marijuana legalization and public attitudes, I use state-level estimates of support for marijuana legalization collected by Caughey and Warshaw (2020).[16] Using a difference-in-differences design, I compare changes to public opinion in legalizing states to changes in public opinion over the same time period in a set of similar non-legalizing states. More specifically, I leverage a method recently developed by Xu (2017), which is particularly useful since it allows for implementation of synthetic controls in cases of multiple treated units and variable treatment periods. The method uses a linear interactive fixed effects model to impute counterfactuals for

[15] Interview with former CO state legislator and long-time marijuana legalization advocate, 12/21/2020; Interview with senior official at large cannabis firm, 11/4/2020.
[16] Estimates are weighted based on raked state-level weights using race, education, gender, and age. I use weighted estimates instead of estimates from multilevel regression and poststratification (MRP) since smoothing from MRP might make it more difficult to detect treatment effects (Caughey and Warshaw 2019; Lewis and Linzer 2005).

each treated unit (states legalizing marijuana). I consider legalization of marijuana for medical use and for adult use separately.

Figure 6: Marijuana legalization is not associated with changes to state-level public opinion. Solid lines represent average support for marijuana legalization in legalizing states. Dashed line represents average support in comparable non-legalizing states.

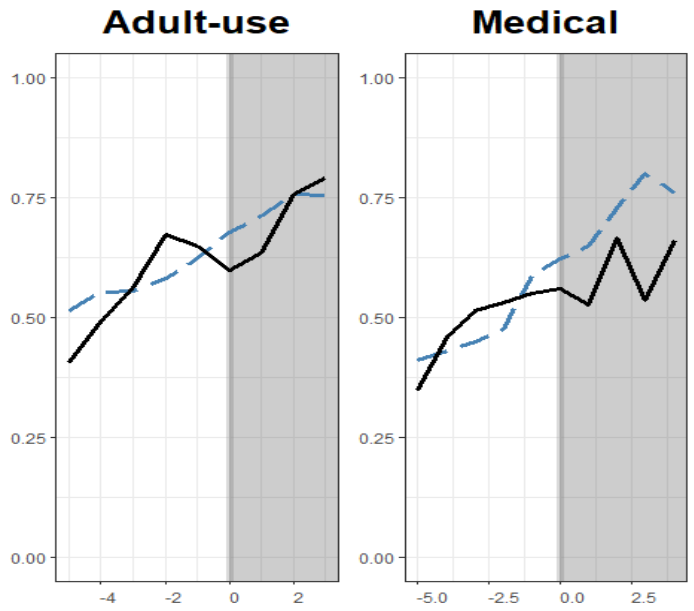


Figure 6 plots average support for marijuana legalization over time for both the treated states and the synthetic controls. In addition to estimates of state-level support for legalization, the model also includes estimates of mass ideology (cultural and economic dimensions) (Caughey and Warshaw 2020). If legalization led to greater public support for marijuana, we would expect the solid series representing legalizing states to jump above the dashed series at treatment (year 0 in Figure 6). The evidence, though, suggests no such effect. Indeed, public opinion, for both adult-use and medical, is slightly more favorable in the synthetic control group, though not

statistically distinguishable from the treated group. This suggests that state-level legalization has not disproportionately improved public opinion in the states where it is adopted.[17]

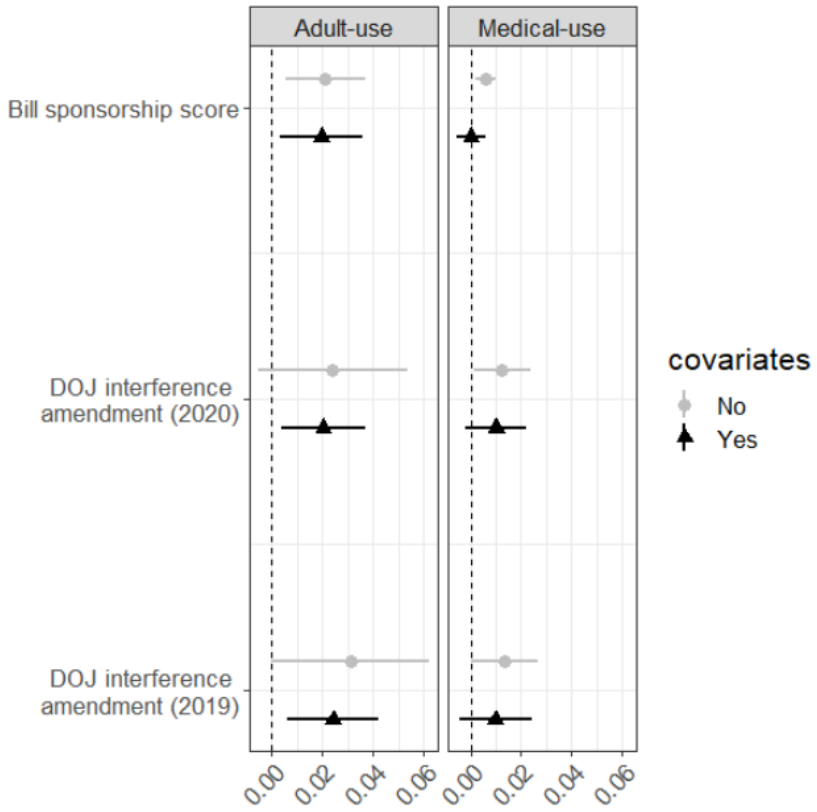
Finally, I turn to the public opinion signaling mechanism. Especially for the majority of cases in which it was enacted via ballot initiative, it is likely that state legalization provided a signal of constituent favorability to lawmakers in Congress. This is the mechanism that, along with growing influence of industry in legalizing states, interviewees working as lobbyists and policy advocates were most likely to raise. It is difficult to investigate quantitatively, though. One analysis that can provide insight into the importance of this mechanism is exploring the relationship between the length of time since legalization and representation. If signaling were driving the effect of legalization on representation, we would expect members representing states with more recent (and thus more salient) legalization votes to adopt more pro-marijuana positions. If industry influence were more fundamental, we would expect members representing states that legalized further in the past, and where industry had a greater amount of time to develop, to adopt more pro-marijuana positions.

Figure 7 presents models with members' bill sponsorship scores (recall, this is the proportion of the bills promoted by the NCIA sponsored by the member) and roll calls on the votes for which a positive effect of legalization was estimated as outcomes, and the number of years of legalization for a members' home state as the key independent variables. The left panel presents results for adult-use states and the right panel presents results for medical-use states (without adult-use). Broadly speaking, results lend support for the industry influence mechanism—not signaling. For adult-use states, in both bivariate and covariate-adjusted models,

[17] State legalization may well have improved public opinion *across all states*, but if this were the case, it would not be expected to differentially affect members of Congress representing legalizing versus non-legalizing states.

years since legalization is positively and statistically significantly associated with both bill sponsorship and roll-call outcomes. I recover similar results in the bivariate models of medical-use legalization, but they are not robust to covariate adjustment. This may reflect the adult-use legalization tends to have a much greater effect on industry growth than medical-use legalization.

Figure 7: Years since legalization is associated with pro-marijuana bill sponsorship and roll calls. Points represent OLS coefficient estimates on variable recording years since legalization, with bill sponsorship and roll-call votes as outcomes. Lines are 95 percent confidence intervals computed using standard errors clustered at the state level.



To be sure, this analysis does not rule out the signaling mechanism, and the fact that this mechanism was mentioned by several interviewees working in marijuana politics suggests this would be an incorrect conclusion. Rather, it suggests that in comparing the mechanisms of signaling to industry influence, growing industry influence is likely playing a greater role in

mediating the relationship between state marijuana legalization and national representation in Congress.

Discussion

Using an IV design that leverages exogenous variation in marijuana legalization from longstanding differences in the availability of citizen initiatives, I have shown that the policy landscapes in the states they represent affect the behavior of members of Congress. I observed strongest effects for bill sponsorship, but also effects on certain lower-profile roll-call votes. The evidence suggests the strongest mechanism driving these effects is growing industry influence in legalizing states, though other mechanisms—particularly signaling of public preferences—cannot be ruled out.

The set of analyses is not without its limitations. One limitation is a short temporal window. Since adult-use legalization and the emergence of the marijuana industry are relatively new phenomena, data is limited. For instance, only a few roll-call votes related to marijuana legislation have been taken since the state legalization wave began. As more data become available, researchers will be able to extend the analyses performed here. In addition, while this study indicates a causal link between state-level adult-use legalization and representation in Congress, there remains uncertainty with respect to the mechanisms. Finally, it should be noted that these analyses likely underestimate the full effects of state legalization on the politics in Congress. While this paper demonstrates the effect of legalization on members representing legalizing states relative to non-legalizing states, mechanisms like growing industry presence in Congress are likely to affect legislators across the country—they are simply more pronounced in legalizing states.

Notwithstanding these limitations, these findings have important implications for understandings of bottom-up diffusion dynamics in American federalism. While existing accounts focus on the mechanism of policy learning in mediating these dynamics, this study shows that the effect of state policy on national politics goes beyond learning—state policies can also affect national lawmaking by shaping state political economies. This can have feedback effects at the national level, since the nature of state political economies determines which organized economic interests will have the capacity to influence members of Congress.

Future empirical work can build on the theoretical framework developed here to explore the role of different mechanisms in different policy cases. It is likely that the learning mechanisms plays a stronger role in technical policy areas that produce weaker or less visible political-economic shifts in the places they are enacted. In addition, signaling of public opinion likely plays a stronger role in areas like marijuana legalization where ballot initiatives are prominent. The findings on the role of state policy in structuring state political economies and, as a result, the pressures faced by members likely generalizes to a number of important policy areas.

Consider, for instance, climate change. Industries reliant on the burning of fossil fuels are enormously powerful in American politics, spending vast amounts of money on lobbying and campaign contributions in federal (Brulle 2018) as well as state and local politics (Stokes 2020). Organized interests enriched by the extraction and burning of fossil fuels have also become a key organizing force within the Republican Party (Skocpol 2013). The power of these groups in our politics is built atop a set of policies in place across the federal system that not only fail to adequately price the negative externalities of burning fossil fuels (Metcalf 2019), but also subsidize the production of fossil fuels (Fossil Fuel Subsidies: A Closer Look at Tax Breaks and Societal Costs 2019). But as states governments continue to adopt and strengthen policies driving

the transition to renewable energy (Rabe 2004), this is likely to reshape the pressures faced by members of Congress, potentially opening new opportunities for federal policy.

Or consider policing. The killing of George Floyd in May 2020 led to widespread protests calling for actions across levels of government to enact major policing reforms, including in Congress (Ferris, Caygle, and Bresnahan 2020). Though these reforms are widely popular (Newell 2020), a major impediment to their enactment is the power of police unions, which leverage financial resources and ability to mobilize members to prevent reforms (Broadwater and Edmondson 2020). Analysis drawing on the framework proposed here might explore the degree to which the power of police unions to prevent reform in Congress is bolstered by pro-police state and local policies.

One key scope condition for this mechanism is the degree to which policy areas feature strong *vested interests* dependent on material benefits from government policies (T. M. Moe 2015). Considering the role of state and local policy in congressional representation, another key scope condition is the degree to which governance is shared between federal, state, and local levels—a core feature of American federalism (Grodzins 1982). The scope of subnational authority in American federalism and increasingly active role of state governments in American politics (Franko and Witko 2018; Grumbach 2018) means it is crucial that we develop a better understanding of the implications of state policies for the broader polity.

The potential applicability of the interest group mechanism identified in this paper across policy domains also has implications for fundamental models of lawmaking in American politics. Standard models conceive of lawmakers as primarily driven by the preferences of the median voters in their districts, which are generally taken as exogenous (Downs 1957). Alternative perspectives suggest that lawmakers are primarily responsive to the pressures of

organized interests seeking to advance policy goals, and moreover, that the *ability* of competing groups to influence politics is structured by the existing policy-scape (Hacker and Pierson 2014). Much of the literature in this framework adopts a historical-institutionalist approach, showing how previously adopted policies reshaped the politics, and in doing so, affected the decisions of lawmakers decades later (Hacker 2002; Pierson 1994).

The strength of this historical institutional scholarship is the wide lens and attention to macro-level change. However, this also means that it is more limited for generating expectations about how shifts to policy landscapes might affect the decisions of individual lawmakers. And because more micro-level policy feedback work generally focuses on intermediate outcomes at the voter and interest group levels, we have accumulated little quantitative evidence that captures the full policy feedback cycle. This paper provides quantitative empirical grounding for the difficult-to-test arguments in favor of the policy-focused approach—and one empirical framework for scholars working in this vein.

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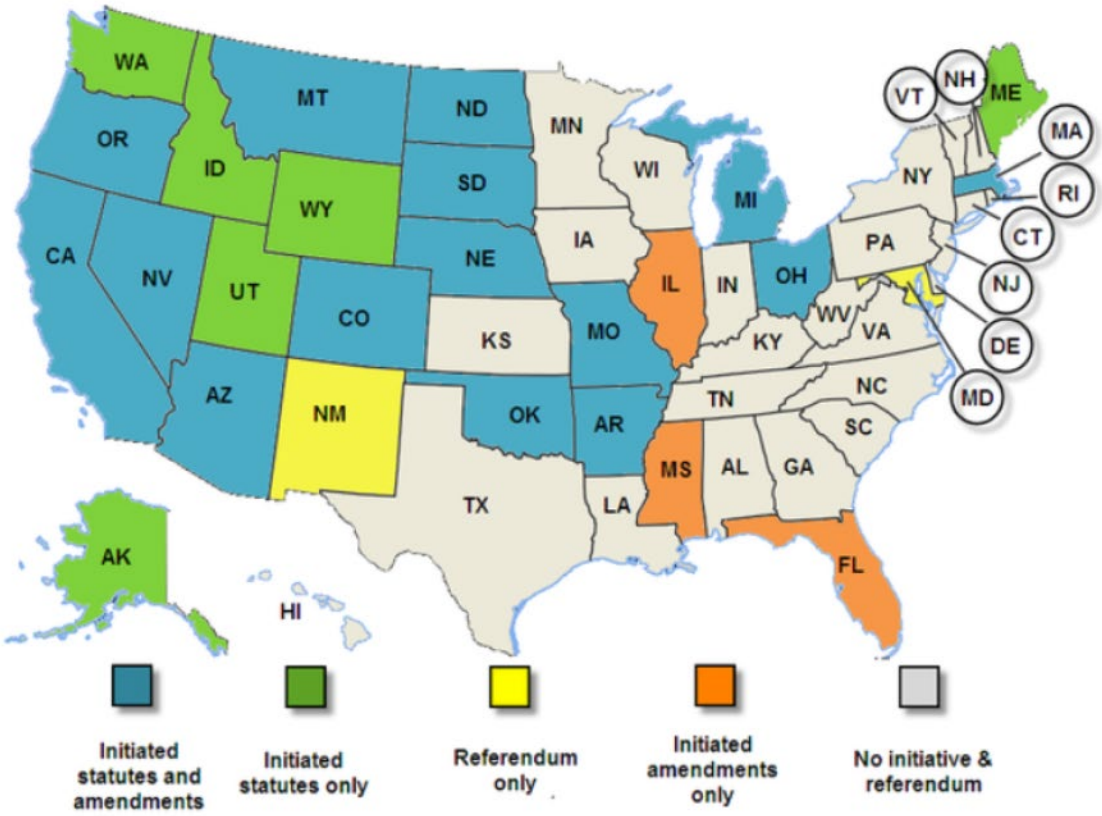
State Policy and National Representation: Marijuana Politics in American Federalism
Appendix

Samuel Trachtman, UC Berkeley

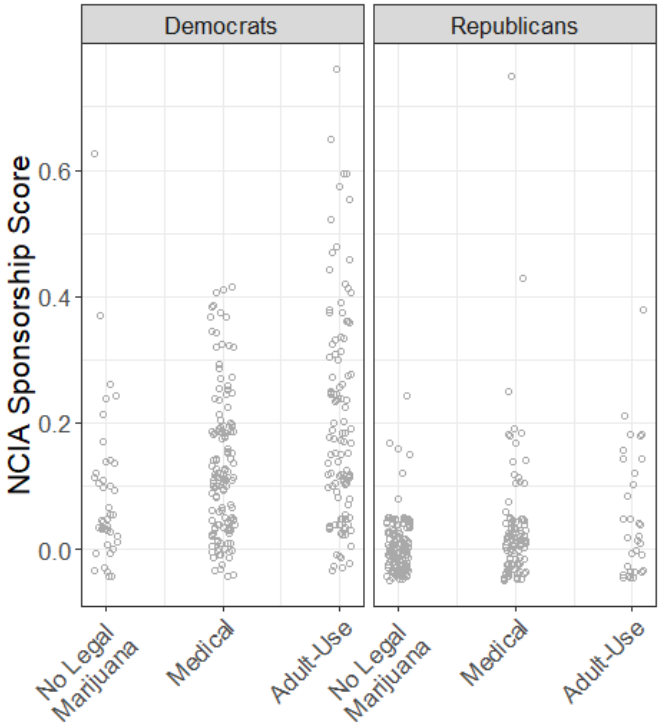
A.1 Descriptive information

Figure A1: Citizen initiative rules



Source: Ballotpedia

Figure A2: Bill sponsorship score distributions by legalization status



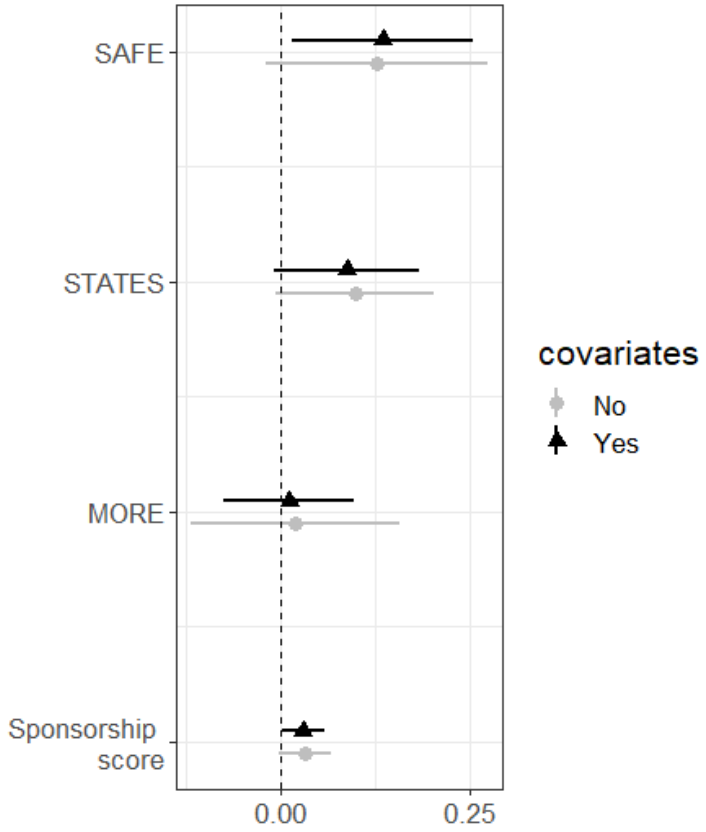
A.2 Robustness checks and additional analyses

Table A1: First stage regression results

	Marijuana legalization status	
	(1)	(2)
Ballot initiative	0.98***	0.87***
	(0.05)	(0.03)
Democratic PID		0.09
		(0.10)
DW-NOMINATE dimension 1		−0.04
		(0.11)
DW-NOMINATE dimension2		0.01
		(0.06)
2016 Democratic presidential vote share		2.48***
		(0.35)
Social liberalism 2000s		0.40***
		(0.07)
Observations	544	542
F Statistic	396.99*** (df = 1; 542)	298.64*** (df = 6; 535)

Note: **p<0.01

Figure A3: Effects of state marijuana legalization on bill sponsorship in the 116th Congress, excluding western states.[18] Figure presents estimates from two-stage least squares regression. State legalization status is instrumented by citizen initiatives rules. 95 percent confidence intervals are calculated using standard errors clustered at the state-level.



[18] These include: AZ, CO, ID, NM, MT, UT, NV, WY, AK, CA, HI, OR, WA.

Figure A4: Effects of state marijuana legalization on bill sponsorship in the 116th Congress, alternative legalization status coding. Figure presents estimates from two-stage least squares regression. State legalization status is instrumented by citizen initiatives rules. 95 percent confidence intervals are calculated using standard errors clustered at the state-level. In this specification, states with legalized adult-use marijuana are coded as "treated", with medical-use and prohibition states in the control group.

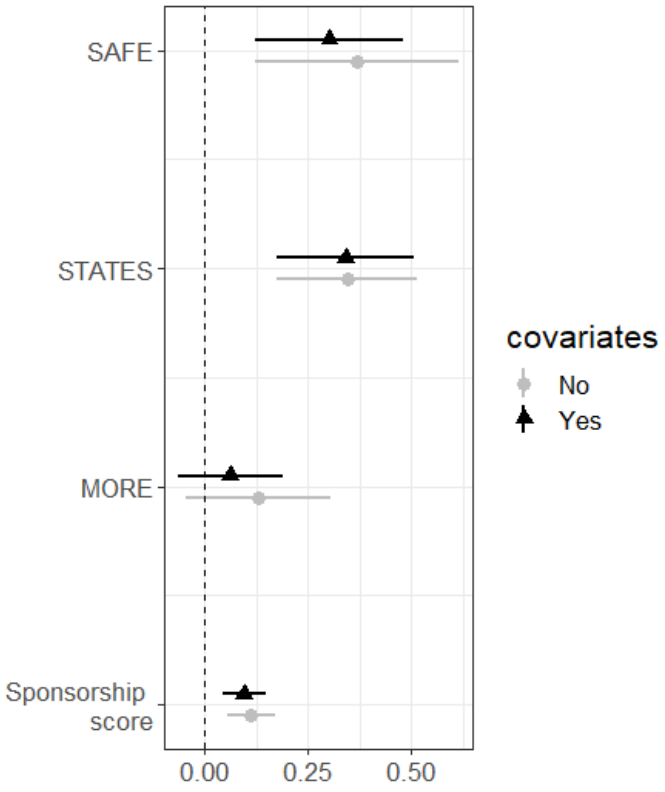


Figure A5: Effects of state marijuana legalization on bill sponsorship in the 116th Congress, by party. Figure presents estimates from two-stage least squares regression. State legalization status is instrumented by citizen initiatives rules. 95 percent confidence intervals are calculated using standard errors clustered at the state-level.

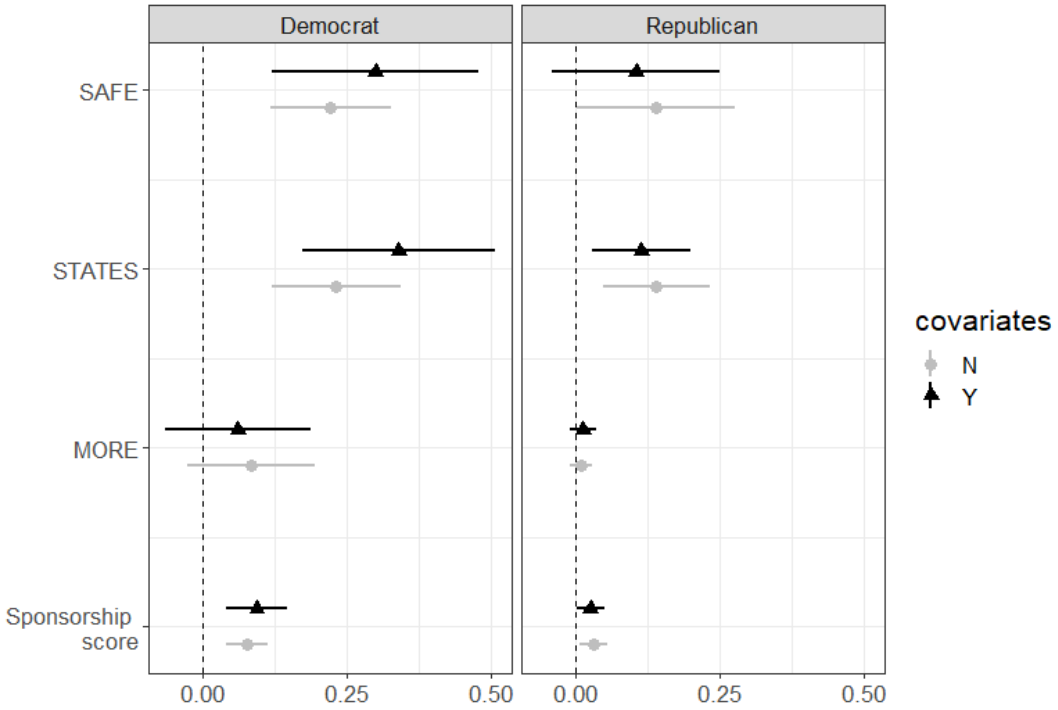


Figure A6: Effects of state marijuana legalization on bill sponsorship in the 116th Congress, covariate adjustment specification. Covariates include party identification, ideology (DW-NOMINATE first and second dimensions), 2016 presidential vote (state-level), and social liberalism (state-level).

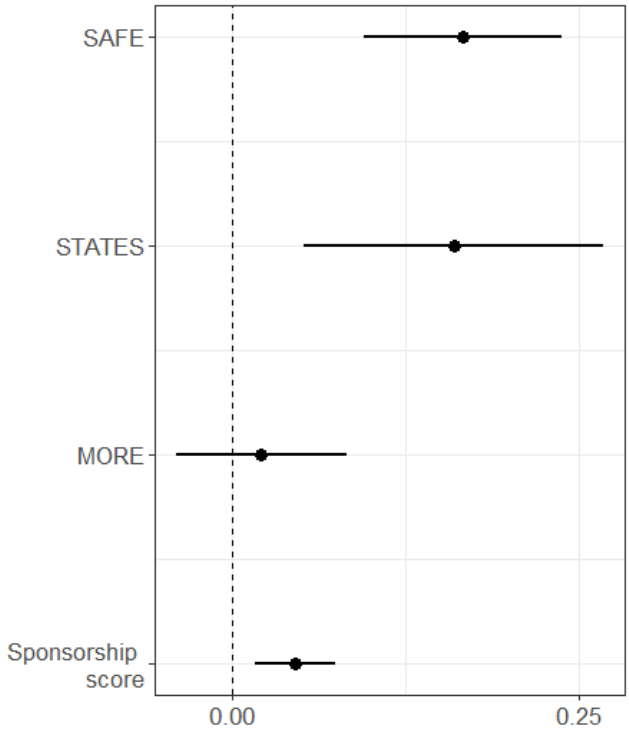
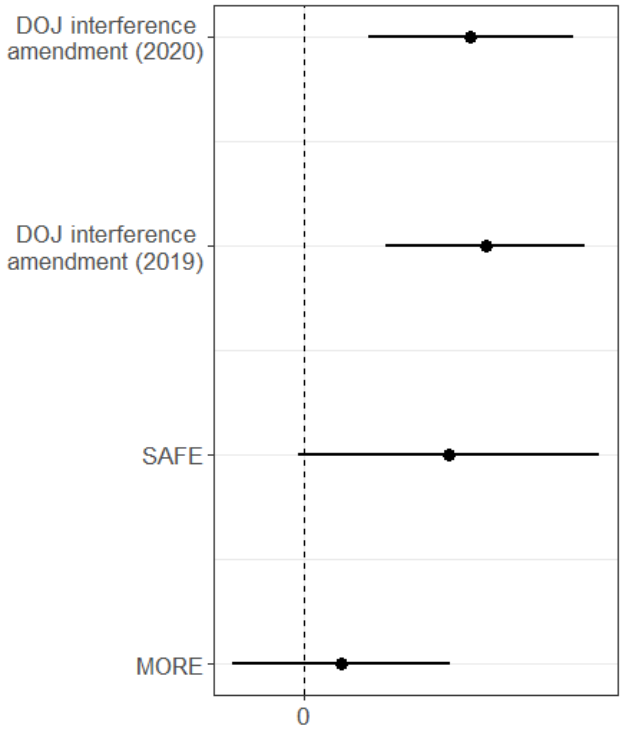


Figure A7: Effects of state marijuana legalization on roll-call voting in the 116th Congress, covariate adjustment specification. Covariates include party identification, ideology (DW-NOMINATE first and second dimensions), 2016 presidential vote (state-level), and social liberalism (state-level).



A.3 Evidence on mechanisms

Figure A8: Proportion of 2018 congressional elections with marijuana industry contributions by legalization status

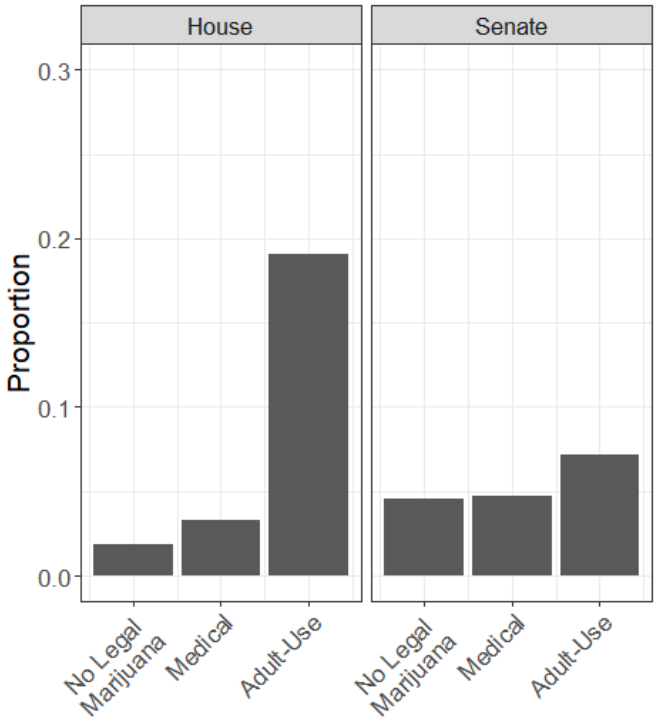
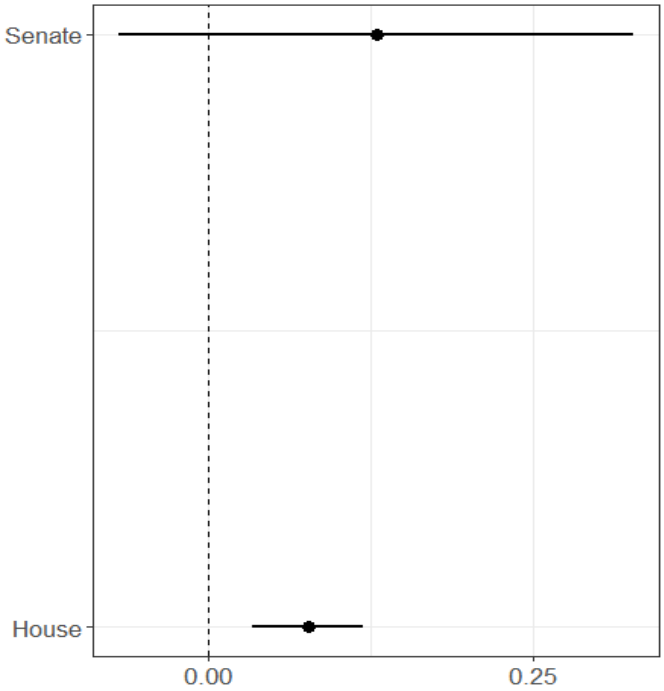


Figure A9: Effect of legalization on receiving campaign donations from marijuana industry in 2018 election cycle. Figure presents estimates from two-stage least squares regression. Outcome is a binary indicator for receiving contributions from marijuana industry. State legalization status is instrumented by citizen initiatives rules. 95 percent confidence intervals are calculated using standard errors clustered at the state-level.



A.4 Ethics in social science research

This research drew in part on semi-structured interviews with individuals with subject matter expertise. The research was exempted from IRB approval because these individuals were asked about matters directly relevant to their own work. Voluntary consent was obtained through both phone and follow-up email.